

CLAIMS

What is claimed is:

1. A dilation system for dilating bodily tissue, the dilation system comprising:

an elongate first dilator comprising a tubular body having an exterior surface extending between a proximal end and an opposing distal insertion end, the body also having an interior surface bounding a passageway extending between the proximal end and the distal insertion end; and

an elongate second dilator comprising a tubular body having an exterior surface extending between a proximal end and an opposing distal insertion end, the body also having an interior surface bounding a passageway extending between the proximal end and the distal insertion end, the passageway of the second dilator being configured to receive the tubular body of the first dilator, the second dilator mechanically engaging with the first dilator such that the second dilator is forced to travel along a fixed path that prevents free rotation of the second dilator relative to the first dilator while at least a portion of the second dilator is being advanced over the first dilator.

2. A dilation system as recited in claim 1, further comprising:

a first mating member formed on the exterior surface of the first dilator;
and

a second mating member formed on the interior surface of the second dilator, the second mating member being configured to engage with the first

mating member when the first dilator is received within the passageway of the second dilator.

3. A dilation system as recited in claim 2, wherein the first mating member comprises an outward projecting member or a bounded track.

4. A dilation system as recited in claim 3, wherein the outward projecting member comprises a thread, thread portion, or tang.

5. A dilation system as recited in claim 2, wherein the second mating member comprises a projecting member or a bounded track.

6. A dilation system as recited in claim 1, wherein the distal insertion end of the first dilator and the second dilator each terminate at a distal terminus, the second dilator mechanically disengaging from the first dilator when the distal terminus of the second dilator is at least substantially aligned with the distal terminus of the first dilator such that the second dilator is free to rotate about the first dilator.

7. A dilation system as recited in claim 1, wherein the distal insertion end of the first dilator has a tapered frustaconical configuration.

8. A dilation system as recited in claim 1, further comprising a third mating member formed on the exterior surface of the second dilator.

9. A dilation system as recited in claim 1, wherein the first dilator has a length and the second dilator has a length that is shorter than the length of the first dilator.

10. A dilation system as recited in claim 1, further comprising a retractor comprising:

a tubular body having an exterior surface extending between a proximal end and an opposing distal insertion end, the body also having an interior surface bounding a passageway extending between the proximal end and the distal insertion end, the passageway of the retractor being configured to receive the tubular body of the second dilator;

a connecting arm outwardly projecting from the body; and
at least one mating member disposed on the interior surface of the tubular body of the retractor.

11. A dilation system for dilating bodily tissue, the dilation system comprising:

an elongate first dilator comprising a tubular body having an exterior surface extending between a proximal end and an opposing distal insertion end, the body also having an interior surface bounding a passageway extending between the proximal end and the distal insertion end;

an elongate second dilator comprising a tubular body having an exterior surface extending between a proximal end and an opposing distal insertion end, the body also having an interior surface bounding a passageway extending between the proximal end and the distal insertion end, the passageway of the second dilator being configured to receive the tubular body of the first dilator; and

means for forcing the second dilator to travel along a substantially fixed path that prevents free rotation of second dilator relative to the first dilator while at least a portion of the second dilator is being advanced over the first dilator.

12. A dilation system as recited in claim 11, wherein the means for forcing the second dilator to travel along a substantially fixed path comprises:

a first mating member formed on the exterior surface of the first dilator; and

a second mating member formed on the interior surface of the second dilator, the second mating member being configured to engage with the first mating member when the first dilator is received within the passageway of the second dilator.

13. A dilation system as recited in claim 12, wherein:

the first mating member comprises at least one first thread outwardly projecting on the exterior surface of the first dilator; and

the second mating member comprises at least one tang or at least one second thread inwardly projecting from the interior surface of the second dilator.

14. A dilation system as recited in claim 12, wherein at least a portion of the exterior surface of the first dilator on which the a first mating member is formed is tapered.

15. A dilation system as recited in claim 1, wherein the distal insertion end of the first dilator and the second dilator each terminate at a distal terminus, the second dilator being free to rotate about the first dilator when the distal terminus of the second dilator is at least substantially aligned with or distal of the distal terminus of the first dilator.

16. A dilation system as recited in claim 12, further comprising a third mating member formed on the exterior surface of the second dilator.

17. A dilation system as recited in claim 11, wherein the first dilator has a length and the second dilator has a length that is shorter than the length of the first dilator.

18. A dilation system as recited in claim 11, further comprising a guide wire,
the passageway of the first dilator being configured to receive the guide wire.

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19. A dilation system for dilating bodily tissue, the dilation system comprising:

an elongate first dilator comprising a first tubular body having an exterior surface extending between a proximal end and an opposing distal insertion end, a first mating member formed on the exterior surface of the first tubular body; and

an elongate second dilator comprising a second tubular body having an interior surface and an exterior surface, the interior surface bounding a passageway extending between a proximal end and an opposing distal insertion end, the passageway of the second tubular body being configured to receive the first tubular body, a second mating member being formed on the interior surface of the second tubular body, the second mating member engaging with the first mating member when the first dilator is received within the passageway of the second dilator.

20. A dilation system as recited in claim 19, wherein the first mating member or the second mating member comprises a track that is at least partially bounded.

21. A dilation system as recited in claim 20, wherein the track is curved or linear.

22. A dilation system as recited in claim 19, wherein the first mating member or the second mating member comprises a thread, thread portion, or tang.

23. A dilation system as recited in claim 19, wherein the second dilator travels along a substantially fixed path relative to the first dilator as a portion of the first dilator is advanced within the passageway of the second dilator and the first mating member engages the second mating member.

24. A dilation system as recited in claim 23, wherein the second dilator freely rotates about the first dilator when the first dilator is received with the passageway of the second dilator and the second mating member is distal of the first mating member.

25. A dilation system as recited in claim 19, further comprising an elongate third dilator comprising a third tubular body having an interior surface and an exterior surface, the interior surface bounding a passageway extending between a proximal end and an opposing distal insertion end, the passageway of the third tubular body being configured to receive the second tubular body.

26. A dilation system for dilating bodily tissue, the dilation system comprising:

an elongate first dilator comprising a first tubular body having an exterior surface extending between a proximal end and an opposing distal insertion end, a first tissue engaging member formed on the exterior surface of the first tubular body at or toward the distal insertion end; and

an elongate second dilator comprising a second tubular body having an interior surface and an exterior surface each extending between a proximal end and an opposing distal insertion end, the interior surface bounding a passageway configured to receive the first tubular body, a second tissue engaging member being formed on the exterior surface of the second tubular body at or toward the distal insertion end.

27. A dilation system as recited in claim 26, wherein the second tissue engaging member comprises at least one thread, thread portion, or tang outwardly projecting from the exterior surface of the second tubular body.

28. A dilation system as recited in claim 26, further comprising an elongate third dilator comprising a third tubular body having an interior surface and an exterior surface each extending between a proximal end and an opposing distal insertion end, the interior surface bounding a passageway configured to receive the second tubular body, a third tissue engaging member being formed on the exterior surface of the third tubular body at or toward the distal insertion end.

29. A dilation system as recited in claim 26, wherein the first dilator has a length and the second dilator has a length that is shorter than the length of the first dilator.

30. A dilation system as recited in claim 29, wherein the distal insertion end of the first dilator and the second dilator terminate at a distal terminus and the proximal end of the first dilator and the second dilator terminate at a proximal terminus, the first dilator having a marking on the exterior surface thereof such that when the proximal end of the second dilator is aligned with the marking, the distal terminus of the second dilator is aligned with the distal terminus of the first dilator.

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31. A dilator for dilating bodily tissue, the dilator comprising:
an elongated tubular body having an exterior surface extending between
a proximal end and an opposing distal insertion end, the body also having an
interior surface bounding a passageway extending between the proximal end and
the distal insertion end; and
a first mating member formed on the interior surface of the tubular body.

32. A dilator as recited in claim 31, wherein the first mating member
comprises at least one thread, thread portion, or tang projecting from the interior surface
of the tubular body.

33. A dilator as recited in claim 31, wherein the first mating member
comprises at least one bounded track formed the interior surface of the tubular body.

34. A dilator as recited in claim 31, wherein the tubular member is
comprised of a radiolucent material.

35. A dilator as recited in claim 31, further comprising a second mating
member disposed on the exterior surface of the tubular body.

36. A dilator as recited in claim 31, wherein the exterior surface of the distal
insertion end has a tapered frustaconical configuration.

37. A dilator as recited in claim 31, wherein the first mating member is spaced apart from the distal insertion end of the tubular body.

38. A dilator as recited in claim 31, wherein the first mating member is formed at the distal insertion end of the tubular body.

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39. A retractor configured to retract bodily tissue during a surgical procedure, comprising:

a tubular body having an exterior surface extending between a proximal end and an opposing distal insertion end, the body also having an interior surface bounding a passageway extending between the proximal end and the distal insertion end; and

a clamping member outwardly projecting from the body; and
at least one mating member disposed on the interior surface of the tubular body.

40. A dilator as recited in claim 39, wherein the at least one mating member comprises at least one thread, thread portion, or tang projecting from the interior surface of the tubular body.

41. A dilator as recited in claim 39, wherein the at least one mating member comprises at least one bounded track formed the interior surface of the tubular body.

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42. A method for dilating bodily tissue, the method comprising:

dilating bodily tissue with a distal insertion end of a first dilator;

positioning a proximal end of the first dilator within a passageway of a tubular second dilator;

advancing the second dilator over the first dilator such that through at least a portion of the advancement, the second dilator mechanically engages with the first dilator so as to prevent free rotation of the second dilator around the first dilator; and

dilating bodily tissue with a distal insertion end of the second dilator.

43. A method for dilating bodily tissue as recited in claim 42, further comprising aligning a distal terminus of the second dilator with a distal terminus of the first dilator such that the second dilator mechanically disengages from the first dilator so as to enable free rotation of the second dilator around the first dilator.

44. A method for dilating bodily tissue as recited in claim 42, further comprising advancing a third dilator over the second dilator and the first dilator.